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TAXONOMIC HISTORY OF PERENNIAL SOUTHWESTERN DATURA METELOIDES

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(Plate 838)

The native perennial Southwestern *Datura* variously called the "Sacred *Datura*" (*Kearney*), "Indian Apple" (*Castetter*) or "Tolguacha" (*Jepson*) carries a botanical name which rests, not upon an actual herbarium specimen, but upon a hastily executed copy of a Sessé and Mociño drawing. This fact in itself need not

concern us unduly since several Mexican plants rest nomenclatorially in like manner upon these drawings which then serve as "types". However, the original description of *Datura meteloides* DC., the current botanical name of this plant, disagrees in several particulars from the living plant, especially in the characters of the flower. Yet this name cannot be shown to be a misapplied binomial because no other species of *Datura* has been found in central Mexico which agrees with the original description¹ nor with the drawing upon which it is based. In short, the drawing which serves as the type in this instance is faulty but still must apparently serve as the nomenclatural basis of the name given by deCandolle. The alternative, which may be desirable, would be to relegate deCandolle's name to the list of *Nomina confusa* and take up the next legitimately published name in the taxonomic history of the plant. This is, beyond question, Eduard Regel's name *Datura Wrightii*, published by Regel upon his recognition of the discrepancy that exists between the original description of *D. meteloides* and the plant introduced into European horticulture in the late 1850's under that name. *Datura Wrightii* rests, although not upon an ascertainable type as designated by Regel, yet upon a thoroughly representative and extant collection which may be designated the lectotype.

This paper aims to bring together the cogent facts relative to this rather intricate nomenclatural situation for a plant well known to Southwestern field botanists, to ethnobotanists², to pharmacologists, and to cytogeneticists who must use valid and verifiable binomials in their expanding and important research in *Datura*.

TAXONOMIC HISTORY OF DATURA METELOIDES DC.

Our native perennial *Datura* received its first botanical name in manuscript from Alphonse deCandolle in reference to its general resemblance to *D. Metel* L. of India. This name was taken up by Dunal and published in the *Prodromus* in 1852.³ A close analysis of the original description reveals several points of difference in the flower-morphology over our Southwestern *Datura*. These may be tabulated as follows:

¹ Cf. synopsis by Safford, *Jour. Wash. Acad. Sci.* 11: 173-189. 1921.

² Cf. Safford, *Ann. Rept. Smiths. Inst.* 1920: 550-555. 1922; also, Castetter, *Univ. N. Mex. Bull. biol. ser.* 4: 26. 1935.

³ *Prodromus* 13 (pt. 1): 544. 1852.

DATURA METELOIDES As described by deCandolle	DATURA METELOIDES As known from wild plants in the field
<i>Calyx-lobes</i> very unequal	<i>Calyx-lobes</i> equal or nearly so
<i>Fruiting calyx</i> deciduous	<i>Fruiting calyx</i> persistent
<i>Leaf-blades</i> sinuate to strictly entire, equilateral at base	<i>Leaf-blades</i> coarsely sinuate-dentate, usually equilateral at base
<i>Corolla-limb</i> short, scarcely flaring	<i>Corolla-limb</i> ample, distinctly trumpet-flaring
<i>Capsule</i> thinly spinose	<i>Capsule</i> closely beset with slender subacicular spines

Datura meteloides DC. rests upon a Sessé and Mociño drawing of a plant recorded as native of "calidis Novae Hispaniae regionibus", the frequent designation for central Mexico in the early history of exploration. In verifying the application of the name to the Californian plants of this species I submitted a recent collection (*Ewan 10963*) for comparison with the type in the deCandollean Herbarium. I am indebted to Dr. Baehni and to Dr. Hochreutiner for their assistance in making the comparison and for tabulating the differences for me. The more significant differences have been included in the foregoing table. A photograph of the "type", that is, the drawing (Icones no. 919), taken by Mr. J. F. Macbride, and preserved in the deCandollean Herbarium at Geneva has been kindly furnished by Dr. Clifford C. Gregg of Field Museum, and is reproduced here as PLATE 838. Presumably the drawing was prepared from an actual plant-specimen, most likely collected by Mociño. The actual place of collection, in fact the origin of the plant as to its garden-source or other matters, is now unknown. Some suggestions as to the botanizing activities of Sessé and Mociño over the Mesa Central of Mexico have been offered by Sprague.⁴ The states of Jalisco and Michoacan especially were visited by them, but the states of Mexico, Morelos, Guerrero, Guanajuato and Queretaro were also visited before 1792.

The unfinished character of the Sessé and Mociño drawing is understandable when the history of these drawings is recalled.⁵ It is well known that the originals were loaned to August Pyramus deCandolle by Mociño and recalled on short notice for

⁴ *Kew Bull. Misc. Inform.* 1926: 417. 1926.

⁵ Cf. Standley, *Contrib. U. S. Nat. Herb.* 23: 16. 1920.

their return to Spain. Recognizing their value as a documentary record of the Mexican flora, deCandolle enlisted the help of the citizenry of Geneva in making copies of the Mociño drawings before their return. It is a tribute both to deCandolle and to the townspeople who came to his aid that these drawings were preserved to us. But doubtless some of the errors in the *Datura* plate may be attributable to the hurried work of these mostly non-botanical copyists.

Since no collection other than the Sessé and Mociño drawing was cited by deCandolle in the original description, it is impossible to select another collection as a lectotype for *D. meteloides*.

No localized or endemic species of *Datura* from the Mesa Central has been detected with which it might be confused as a misinterpreted name. The Mexican collections seen agree in essential characters with those from our Southwestern states. Except for Regel's name as hereinafter discussed, botanists have quite uniformly accepted deCandolle's name without question; indeed, they have seldom mentioned Eduard Regel's binomial even in synonymy. Safford does not discuss the problem in his interesting and well documented account of the genus *Datura*.⁶

In April, 1855, Thomas Antisell collected what is reported as "Toloachi" between "San Bernardino and San Gabriel" in San Bernardino Valley on the coastal plain of southern California. John Torrey in 1856, in publishing an account of the Antisell collections⁷, gave this *Datura* its first varietal name, somewhat falteringly, "*D. Metel* L. var. *quinquecuspidata* Torr." This name is nearly without accompanying description; it is a *nomen subnudum*. This fact would indicate that Torrey had not recognized deCandolle's name as applicable to the Californian plant in question.

TAXONOMIC HISTORY OF *DATURA WRIGHTII* REGEL

Charles Wright made a good collection, with seeds, of Tolguacha in western Texas in June, 1849 (his no. 526), but since the *Solanaceae* was not reached in the sequence of families treated in *Plantae Wrightianae* (Part I, 1850, published as Smithsonian Contrib. to Knowledge, vol. 3, art. 5), Wright's collection was not noticed prior to the publication of deCandolle's name (1852).

⁶ *Jour. Wash. Acad. Sci.*, 1. c.

⁷ *Pac. RR. Rept. bot. sect. 7*: 18. 1856.

Asa Gray communicated Wright's seeds, however, to the French horticulturist, M. Louis Vilmorin, in 1855 under the name "*Datura meteloides* DC.". Upon its flowering abroad both the *Flores des Serres* and the *Revue Horticole* carried illustrated accounts of the novelty in 1857.⁸ Especially stressed along with other comparisons were the conspicuous, showy flowers of this new *Datura* over others in cultivation. Vilmorin-Andrieux & Cie. in the third edition (no date) of their *Fleurs de Pleine Terre* give "False *Datura* Metel" as a French vernacular name but do not comment upon its introduction.

The German botanist Eduard August von Regel (1815–1892) is well known as the founder of the carefully edited horticultural periodical *Gartenflora*. Founded in 1852 this "Monatsschrift" was devoted to German, Russian and Swiss gardens and garden-flowers. It was in July 1859 that Regel published in the *Gartenflora*⁹ a description of the *Datura* recently introduced by Vilmorin and now recognized as not conforming with the description of *D. meteloides* DC. Though Regel was at the time Director of the then Imperial Botanic Garden at St. Petersburg, the *Datura* had been grown at Zurich prior to his rather sudden departure for St. Petersburg. Though there are Regel collections made up to the year 1856 at Zurich,¹⁰ there was not preserved a collection of the garden-grown *Datura* which he described in 1859. Many details relative to the description of new species were left unfinished at Zurich, including herbarium-labelling, upon his departure for the directorship at St. Petersburg. In describing *Datura Wrightii* and contrasting it with *Datura meteloides* Regel enumerates the differences as observed in the plants grown at the Botanical Garden at Zurich. He does not refer to the nativity of the Vilmorin seeds beyond the misstatement that the new *Datura* is a native of California. The name is given as "*Datura Wrightii* Hort." but I am unable to locate any previous use of this name before Regel's publication of it in 1859. By inference one must conclude that he knew the seeds were to be credited to Charles Wright, or, possibly, this name may have reached him as a manuscript name when the seeds were received. A search through pertinent seed-lists not available to me now might demonstrate this to be a fact.

⁸ The author is indebted to Dr. L. H. Bailey for a photostat of one of these accounts.

⁹ *Gartenflora* 8: 193. t. 260. 1859.

¹⁰ Cf. Alphonse deCandolle, *Phytographie* 442. 1880.

In any case, Regel accurately describes and excellently illustrates (t. 260) our Southwestern Tolguacha.

The citation of "Hort." given the binomial by Regel may, I believe safely, be replaced by Regel as author-citation. To be sure, Asa Gray¹¹, among others, cites the name as Regel published it. More recently *Index Londinensis* assigns the name to Regel. The fact that the author of the binomial himself later¹² accepts the name as of his authorship would clear away possible nomenclatural difficulties on this small point. The fact that the binomial has never been confused under either citation makes the transfer even more accurate.

But the typification of Regel's name is not so simple. Unfortunately Regel apparently did not preserve a specimen of the cultivated plant grown at Zurich. At least Dr. Walo Koch, Docent and Conservator of botanical collections at Eidgenössische Technische Hochschule, informs me¹³ that no pertinent collection exists at Zurich. Nor is there a collection at Leningrad which might serve as the type of *D. Wrightii* Regel. There is a single sheet at Leningrad, which Prof. Boris K. Schischkin, Director of the Institute and Botanic Garden, kindly sent me on loan, which might seem to be cogent. It is, however, a collection of *D. Metel* and has been so labelled on the form-label reading "Ex horto bot. Petropolitano". The only data on the label otherwise is as follows: "(1764 m. Ausfeld s[ub]n[omine] D. Wrightii) 18 $\frac{1}{IX}$ 64. [Ferdinand]v. v[on] Herder". Hence this sheet is not involved, I believe, in our problem of establishing the type of Regel's published name. The Charles Wright sheet (his no. 526) from western Texas, as mentioned above, may be satisfactorily designated as the lectotype of *Datura Wrightii*, especially since the seeds which made known the plant in European gardens were also gathered by Wright. Wright's collection came from the head of Turkey Creek at the border of Uvalde and Kinney Cos., Texas, on June 29/30, 1849, en route from San Antonio to El Paso on his first expedition, if the number 526 on the sheet in the U. S. National Herbarium (60043), written on the label in pencil by Asa Gray, refers to the field-collection number.

¹¹ A. Gray, *Synopt. Fl.* 2 (pt. 1): 240. 1878; ed. 2. 240. 1886.

¹² *Gartenflora* 30: 218. zinco cut. 1881. Appears as "D. Wrightii Rgl."

¹³ Letter of 10 Jan. 1939.

There is the possibility that in this instance, as Wooton¹⁴ pointed out, the "plants were not distributed under the collection numbers." Until further information is at hand, Turkey Creek, Uvalde-Kinney county line, Texas, may be accepted as the type locality of *Datura Wrightii* Regel.

RECOMMENDATIONS

a) I recommend that *Datura meteloides* DC. be accepted as a *nomen emendandum* and continued in use with such corrections made in descriptions as are necessary to bring the concept into accord with the living plant.

b) It is desirable that record of such an emended status be made by citing the binomial as "*D. meteloides* DC. *emend.*"

c) I recommend that "*D. meteloides* DC." be considered by the Committee on Nomenclature of the International Botanical Congress; and if a *nomina conservanda* list for species, apart from that for genera, meets with support from the Congress, that the binomial be proposed for that list to be acted upon at the next regular meeting of the Congress.

d) In the event that *D. meteloides* DC. is relegated to the list of *nomina confusa* by the Congress, I recommend that *Datura Wrightii* Regel be taken up as the next available name for this species.

e) I recommend that *Charles Wright 526* (USNH 60043) be accepted as the lectotype, as designated herein, and that accordingly Turkey Creek, Uvalde-Kinney Co. line, Texas, be taken as the type locality for *D. Wrightii* Regel.

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IS ERIGERON CAROLINIANUS A VALID AMERICAN SPECIES?

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In his sumptuous *Hortus Elthamensis*, ii. 412, t. CCCVI, fig. 394 (1732), Dillenius described and illustrated his *Virga aurea carolinensis*, *Linariae monspessulanae foliis*; and upon this account alone Linnaeus, *Sp. Pl.* 863 (1753), based his *Erigeron carolinianum*, assumed by Linnaeus from the Dillenian phrase to have its habitat in Carolina. *Erigeron carolinianus* was one of several plants given binomials by Linnaeus, probably without first-hand knowledge of them, and assumed to be American.

Naturally American botanists began guessing what Dillenius might have had. Most of them, unfortunately, did not read what he said. Thus Pursh, *Fl. Am. Sept.* ii. 535 (1814), placed

¹⁴ Wooton, *Bull. Torrey Bot. Club* 33: 561-566. 1906; cf. also, Geiser, *Field & Lab.* 4: 23-32. 1935, for valuable additions to Wooton's paper.